

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of) PS Docket No. 06-229
)
Request by the County of Maui, County of Hawaii,)
County of Kauai, City & County of Honolulu, and)
State of Hawaii for Waiver of the Commission's)
Rules Regarding a 700 MHz Public Safety)
Interoperable Broadband Network)

REQUEST FOR WAIVER

Pursuant to Section 1.925(b) of the Commission's rules, the County of Maui, County of Hawaii, County of Kauai, City & County of Honolulu, and State of Hawaii (collectively the "Hawai'i Petitioners" or "Hawai'i") respectfully request that the Federal Communications Commission ("FCC/Commission") grant a waiver of its 700 MHz public safety early deployment rules to enable the construction and operation of a 700 MHz interoperable public safety broadband network within the State of Hawaii (Region 11 for 700 MHz Public Safety Spectrum).

The Hawai'i Petitioners regard the establishment of a cooperatively shared, interoperable public safety broadband network as a critical need for its first responders and, pending approval of the instant request for waiver, is planning for the deployment of such a network as quickly as possible in the 700 MHz public safety broadband spectrum. As explained in detail below, the regional network we propose (the "Hawai'i Broadband Network") would both meet the technical specifications the FCC has proposed for the shared commercial/public safety system and be capable of integration into any shared commercial/public safety network (the "Shared Wireless Broadband Network") that may ultimately be established. A waiver would provide the first responders in the State of Hawai'i with needed telecommunications capability without compromising the Commission's efforts to achieve a public safety network

through public/private partnerships. The Hawai'i Petitioners ask that the Region 11 Hawai'i (700 MHz) Regional Planning Committee be given the responsibility to ensure that the regional network proposed is cooperatively and fairly shared.

Congress recently demonstrated its significant commitment to advancing the deployment of public safety broadband communications. In the American Recovery and Reinvestment Act of 2009, Congress made available over \$7 billion of Federal funds for broadband deployment, stating that one of its goals in doing so is to "improve access to, and use of, broadband service by public safety agencies."¹ Grant of the requested waiver thus would be consistent with Congress's recent action to expand public safety broadband communications.

The Hawai'i Petitioners ask the Commission to act quickly on this request for waiver. Grant of the instant request will allow first responders in Hawai'i – and the public they serve – access to critically needed public safety broadband services while the Commission, the public safety community, and other stakeholders work through the issues remaining to be resolved regarding the final implementation of broadband services within the D Block and other segments of the 700 MHz band.

I. INTRODUCTION

In 1997, Congress directed that 24 MHz of spectrum in the Upper 700 MHz band be allocated for public safety communications. Although the final shutdown of analog television broadcast services on July 12, 2009 finally opened up that spectrum for use nationwide, Hawai'i's television transition occurred on January 15, 2009. The allocation of narrowband frequencies within the 700 MHz Public Safety Band is progressing through the Regional Planning Committee process with approved plans on file for about half of the regions. The plans

¹ American Recovery and Reinvestment Act, Pub. L. No. 111-5, § 6001(b)(4) (2009).

for the remaining blocks of public safety spectrum have evolved from wideband to broadband and from broadband to shared public/private broadband use. Most recently, the Commission has worked without success to promote establishment of a 700 MHz Public-Private Partnership for interoperable public safety broadband communications throughout the United States. In the meantime, state and local jurisdictions with a compelling need to access interoperable broadband communication services tailored to public safety use have waited patiently as these large blocks of spectrum identified for that use remain unused and unavailable.

The Commission has proposed revised rules that retain the Public-Private Partnership concept and set forth detailed technical and operational rules to govern the Shared Wireless Broadband Network,² however many issues remain. It is uncertain if, when, and how the next auction of the Upper 700 MHz D Block will occur and, when it succeeds, what the impacts will be to technical standards, operations, and the type and nature of the envisioned nationwide coverage. Because of the delays and uncertainties in establishing the Shared Wireless Broadband Network, first responders in Hawai'i are put at risk due to the inability to access and use the rich, timely, and secure information available through modern broadband networks.

The Commission's current 700 MHz rules reserve to the Upper 700 MHz D Block licensee "the exclusive right to build and operate the Shared Wireless Broadband Network."³ The rules include two exceptions, which allow local public safety entities, with the approval of the Public Safety Broadband Licensee, to construct broadband networks at their own expense (1) in areas where the Upper 700 MHz D Block licensee has committed in a Network Sharing

² See *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band*, WT Docket No. 06-150 and PS Docket No. 06-229, *Third Further Notice of Proposed Rulemaking*, FCC 08-230 (rel. Sept. 25, 2008) ("*Third Further Notice*").

³ 47 C.F.R. §§ 27.1330 & 90.1430(a).

Agreement to build out a network by a certain (later) date, and (2) in areas where the Upper 700 MHz D Block licensee is not required by a Network Sharing Agreement to build out.

These exceptions presuppose the existence of a D Block licensee and a Network Sharing Agreement – conditions that do not exist. Absent a successful D Block auction and Public-Private agreement, the Commission's rules do not allow for the immediate deployment of broadband services that will benefit public safety and the public at large.⁴ Nonetheless, the Hawai'i Petitioners are eager to deploy a broadband Public Safety Wireless Network to support state and county law enforcement agencies and departments, State and county fire departments, rescue/Emergency Medical Service providers, and other entities using the public safety telecommunications systems, including federal agencies, public works and transportation departments and other agencies and departments in government with a similar public service role, educational institutions and hospitals. Use of the Hawai'i Broadband Network in the 700 MHz band would allow these and other public safety and public service agencies to achieve greater interoperability and cost effectiveness, and would increase the coverage area of their communications systems because of the 700 MHz band's superior propagation characteristics. The Hawai'i Petitioners therefore ask the Commission to act quickly on the instant waiver request so design, construction, and operation can begin as quickly as possible.

⁴ The *Third Further Notice* acknowledges this fact and seeks comment on a proposal by Alcatel-Lucent under which the Commission would revise the early build-out rules to allow jurisdictions to deploy local networks that can be integrated into the regional or national network, with commercially reasonable compensation provided once they are integrated. See *Third Further Notice* at ¶¶ 294-304. Hawaii believes that the Commission should modify its early deployment policy as suggested in the *Third Further Notice* in light of the reality that deployment of the Shared Wireless Broadband Network may occur later than anticipated. This waiver request would be rendered moot were the Commission to adopt and make effective the proposed amendments to the early build-out rules.

II. HAWAI'I NEEDS BETTER PUBLIC SAFETY BROADBAND COMMUNICATIONS AND IS PREPARED TO DEVOTE RESOURCES TO DEPLOY AN INTEROPERABLE NETWORK IN THE 700 MHz BAND.

In Hawai'i, there is a dire need for the broadband services that a newly-deployed 700 MHz public safety broadband system would supply:

- The county police and fire departments and the State sheriffs are forced to do without broadband wireless communications or fund costly recurring monthly charges for commercial wireless services. For example, because of the lack of needed public safety oriented broadband wireless connectivity, police officers must return to their district stations to access routine criminal justice information. This information would be readily available to officers in the field if broadband data access were available.
- Hawai'i's firefighters lack connectivity to wireless broadband service for all front line fire companies as these commercial services may be too costly. With a public safety wireless network, firefighters could access real-time full-motion video capabilities to provide situational information to other first responders, en-route or at the scene, as well as to supporting companies.
- Commercial wireless broadband service is available in only the populous areas of the State. Much of the State is comprised of remote, rural districts that do not have these services as there is no means for the companies to recoup their expenses. It is in these areas that broadband wireless communications are more essential to the first responders as their backup is usually several miles away. Access to broadband wireless data is critical to their safety and ability to provide services to remote, rural residents.
- With broadband wireless communications resources available to the first responder and public safety communities statewide.
 - Police officers would know quickly and silently that vehicles they are stopping are stolen, and that individuals they are interviewing are wanted or dangerous. They would also be able to conduct photo lineups of suspects while still at the crime scene, and access web-enabled surveillance cameras in public facilities to gain intelligence critical to the safe resolution of blockaded or hostage incidents.
 - Firefighters would know which routes were blocked due to construction or accidents, which hydrants were out of service, and what hazardous conditions exist as soon as the data is updated by police, water departments and building inspectors.
 - Medics would be able to stream patient's vitals and video of the patient to the emergency rooms, where the doctors would be able to better and more quickly diagnose and issue orders for treatment while the ambulance is en-route to the hospital.

- Emergency managers would be able to receive real-time data and video from incident sites, teleconference with incident commanders, and quickly share critical information, and mobilize essential resources to ensure the swift and safe resolution of the emergency situation.

The Hawai`i Petitioners plan to deploy a public safety broadband network in the 700 MHz band in the near-term (*i.e.*, before the national Shared Wireless Broadband Network, whether shared commercial/government or government only public safety network could be established). Deployment of such a network in Hawai`i will enhance day-to-day, task force and mutual aid response through support of a full spectrum of interoperable, IP-based multi-media applications, including:

- Streaming video (surveillance, remote monitoring)
- Digital Imaging
- Automatic Vehicle Location
- Computer Aided Dispatching
- Email
- Mapping/GIS
- Remote Database Access
- Report Management System Access
- Text Messaging
- Telemetry/Remote Diagnostics
- Web Access

The Hawai`i Broadband Network will support applications that currently cannot be supported over existing narrowband or wideband wireless data technologies. Most needed is support for tasks that require substantial time for communication between dispatchers and other officers on narrowband voice systems that require the transmission of long data strings or complex information (*e.g.*, database lookups and dispatch messaging). These could be off-loaded to the broadband spectrum, significantly reducing narrowband channel load and stress on the dispatch center personnel. In addition, allowing police officers, for example, to have remote access to databases (*e.g.*, DMV, warrants, missing persons and stolen vehicle databases, etc.),

remote form entry and reporting, and web access will enhance public safety by increasing officer efficiency, reducing paperwork and allowing officers to spend more of their time on patrol.

Broadband networks will allow mission-critical information to be exchanged in real-time, anytime, anywhere. Distribution of images (floor plans, mug shots, incident stills, tactical plans), videos (surveillance feeds, on-scene video), messaging, access to incident management databases provide a common operating picture and access to information from the field, enhancing both incident response and first responder safety. Finally, broadband networks will allow for the secure, easy and interoperable sharing of information (voice, video and multi-media data) among members of a task force.

The Hawai'i Broadband Network will not allow any commercial use of the 700 MHz Public Safety Broadband spectrum block (793-798 MHz for mobile transmission and 763-768 MHz for base station transmission). Nor will this spectrum be used to provide broadband internet service to the general public. The Hawai'i Broadband Network will exclusively use the Public Safety spectrum block for first responders and other public safety and public service providers throughout the State.

To realize these benefits, however, a waiver of the Commission's early deployment rules is necessary. If approved in the near term, we believe installation of the Hawai'i Broadband Network will begin in the fourth quarter of 2009 with completion planned by the end of the third quarter of 2012.

As demonstrated below, the stand-alone Hawai'i Broadband Network will meet the technical specifications the Commission has proposed for the Shared Wireless Broadband Network. Because the public interest thus would be served if the Commission grants the waiver requested herein, we request that favorable action on this request be taken expeditiously.

III. THE REQUESTED WAIVER WOULD SERVE THE PUBLIC INTEREST.

As noted above, deployment of a broadband network would improve the ability of first responders in Hawai'i to protect the public and enhance their safety in the performance of their duties. The public interest would thus be served by granting Hawai'i a waiver, so the Hawai'i Petitioners may deploy a 700 MHz public safety broadband network as soon as possible. As noted above, the Commission's current 700 MHz rules do not permit such an early deployment, except under certain conditions, which do not presently exist. The waiver requested satisfies the Commission's waiver standards – namely, that (1) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the present case, and that a grant of the waiver would be in the public interest, or (2) in view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome, or contrary to the public interest. Moreover, the Hawai'i Petitioners have no reasonable alternative, but to request the waiver.⁵

A. The Hawai'i Petitioners' Deployment of an Interoperable Broadband Network to Serve First Responders Would Not Frustrate The Purposes of the Commission's 700 MHz Rules.

There is no dispute as to public safety entities' need both for reliable and cost-effective broadband services and for more interoperable communications capabilities, especially in light of the communications difficulties encountered in the aftermath of 9/11 and Hurricane Katrina, and in Hawai'i's own experiences with Hurricanes Iwa and Iniki. Furthermore, depending on whether the Commission's future 700 MHz D Block rules attract commercial D Block licensees, deployment of a nationwide shared commercial/public safety network may be a few years away. Hawai'i's first responders deserve to be able to utilize broadband technology to protect life and

⁵ 47 C.F.R. § 1.925(b)(3). Waiver applicants face a high hurdle and must plead with particularity the facts and circumstances that warrant a waiver. *WAIT Radio v. FCC*, 413 F.2d 1153, 1157 (D.C. Cir. 1969) (*WAIT Radio*), *aff'd*, 459 F.2d 1203 (1973), *cert. denied*, 409 U.S. 1027 (1972).

property immediately, and the Commission should allow state and local jurisdictions to fill this gap if they are willing to do so.

In Washington, D.C., the National Capital Region public safety broadband network operates under a waiver similar to that requested herein. The NCR network shows that the 700 MHz public safety spectrum can be put to use today – in advance of any Public-Private Partnership deployment – to provide services critical to the safety of first responders and the public. Hawai'i is ready to offer these same benefits to its citizens, and it should be afforded an opportunity to do so.

While the Commission works through difficult issues to find a way forward in the 700 MHz public safety spectrum proceeding, the public interest requires that local authorities like the Hawai'i Petitioners be allowed to deploy their own interoperable, broadband public safety communications networks. Since its planned network meets FCC technical specifications, its network can be integrated into any eventual Shared Wireless Broadband Network, so the concept of a shared commercial/public safety network would not be compromised. In these circumstances, the public interest favors grant of a waiver of rules that reserve to the Upper 700 MHz D Block licensee the exclusive right to deploy public safety broadband networks.

B. The Network Will Be Robust and Will Satisfy All of the Technical Specifications Proposed by the Commission in the *Third Further Notice*.

The Hawai'i Petitioners plan deployment of a Long Term Evolution (LTE) network to support public safety operations. This LTE system will operate on a paired assignment of 5 MHz wide channels in the public safety broadband block between 793-798 MHz for mobile transmission and 763-768 MHz for base station transmission. The equipment operating band will be compliant with Band Class 14 as specified in the 3GPP standards. LTE is a commercial,

open, standard technology which will be deployed by commercial wireless operators in the commercial portions of the 700 MHz band within the next year.

Our proposed LTE network would meet the technical specifications proposed by the Commission in its *Third Further Notice*, as follows:

- *Capacity, Throughput, and Quality of Service.* With user peak data rates of 31.7 Mbps (downlink) and 8.5 Mbps (uplink) and quality of service support for real-time and non-real-time IP-based applications, LTE will support all the applications listed in Table 1 of proposed Section 27.1305 of the Commission's rules. The network will be designed with effective cell edge data rates exceeding those listed in Table 2 of proposed Section 27.1305. In addition, the system will provide QoS mechanisms and priority levels consistent with LTE standards. Both inter- and intra-user QoS are supported by LTE, including a total of 8 distinct priority levels. Since the network deployed under this waiver request is intended for operation in the public safety broadband allocation and will only serve public safety subscribers, features to preempt consumers or allow priority access to the D block described in the *Third Further Notice* will not be supported. Should they be needed at a later time, these features can be supported by updating the network's core network software.
- *Security and Encryption.* LTE is highly secure in view of its use of a variety of robust authorization and authentication mechanisms employing standard encryption techniques. IPsec is supported. The system will comply with commercial best practices.
- *Availability, Robustness, and Hardening.* The network will be designed for robustness and reliability. The system as designed is expected to exceed the 99.6 per cent availability metric excluding radio signal coverage and scheduled maintenance downtime. Network equipment will be deployed at existing sites currently supporting the state's Land Mobile Radio networks. These sites have been hardened to meet the needs of mission-critical public safety communications. In addition, these sites provide high-capacity, highly-reliable optical transmission facilities.

C. Hawai'i's Network Can be Integrated Into a Shared Commercial/Public Safety Network.

The interoperable public safety broadband network that would be deployed by the Hawai'i Petitioners under the requested waiver will be capable of being integrated into a shared commercial/public safety network once it is built.

A number of county and state-owned assets could be used to support a public-private network. These include:

- Tower structures and ancillary equipment such as antennas, cables and backup power equipment; and
- Base station and core network equipment used to construct the Hawai'i wireless broadband network. Reusable base station components include power amplifiers, I/O units, timing units, RF filters, racks and controller cards. Reusable elements of the IP Core include AAA (Authorization Authentication & Accounting equipment).

The Hawai'i Petitioners would obtain the approval of the Public Safety Broadband Licensee for any early deployment undertaken under the waiver. As noted above, if the Shared Wireless Broadband Network is extended into our area, the Hawai'i Petitioners would work with the D Block licensee and the Public Safety Broadband Licensee to achieve seamless integration.

Because early-deployed networks can meet all Commission technical requirements and can be integrated into the Shared Wireless Broadband Network regardless of the technology chosen, there is no conflict between the Commission's goals in the 700 MHz rulemaking and the requested waiver. In fact, a waiver grant would expedite achievement of the Commission's goals.

IV. CONCLUSION

The Commission would significantly advance the cause of public safety by allowing the Hawai'i Petitioners to deploy their own public safety broadband network that could operate until a Shared Wireless Broadband Network can be established. The Hawai'i Petitioners stand ready to begin deployment of life-saving broadband services, and respectfully request that the Commission promptly allow them to begin by granting the waiver as requested herein.

Respectfully submitted on August ____, 2009.

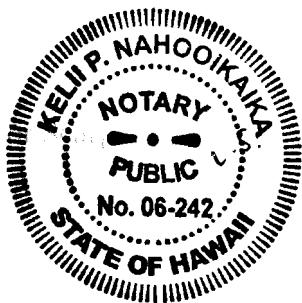
HAWAII PETITIONERS:

COUNTY OF MAUI

By Charmaine Tavares
CHARMAINE TAVARES
ITS MAYOR

STATE OF HAWAII)
COUNTY OF MAUI) SS.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.



My commission expires: 4/30/2010

NOTARY PUBLIC CERTIFICATION


Doc. Date: undated at time of notarization # Pages: 16

Notary Name: KELII P. NAHOOIKA Judicial Circuit: 2nd

Doc. Description: request for waiver of the
Commissions rules re: a 700 MHz public
safety interoperable broadband network


Notary Signature: Kelii P. Nahooika

Date: 8-12-09

A circular notary seal for Kelii P. Nahooika, Notary Public, State of Hawaii. The seal features the text "KELII P. NAHOOIKA" around the top inner edge, "NOTARY PUBLIC" in the center, "No. 06-242" below the center, and "STATE OF HAWAII" around the bottom inner edge. There is a small "S" to the right of the seal.

APPROVED AS TO FORM
AND LEGALITY:

COUNTY OF HAWAII

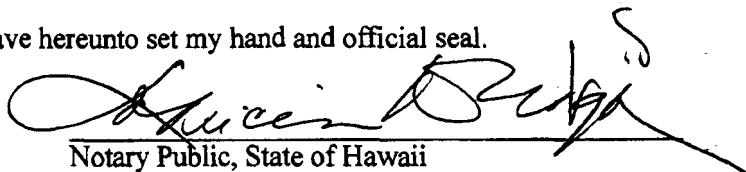

CRAIG MASUDA
DEPUTY CORPORATION COUNSEL
COUNTY OF HAWAII

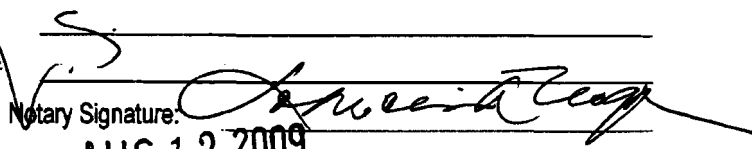
By 
WILLIAM P. KENOI
ITS MAYOR

STATE OF HAWAII)
COUNTY OF HAWAII) SS.


On this 12th day of August, 2009, before me personally appeared WILLIAM P. KENOI, to me personally known, who, being by me duly sworn, did say that he is the Mayor of the County of Hawaii, a political subdivision of the State of Hawaii, and that the seal affixed to the foregoing instrument is the lawful seal of the said County of Hawaii, and that the said instrument was signed and sealed on behalf of said County of Hawaii by authority of its Charter; and the said WILLIAM P. KENOI acknowledged the said instrument to be the free act and deed of said County of Hawaii.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

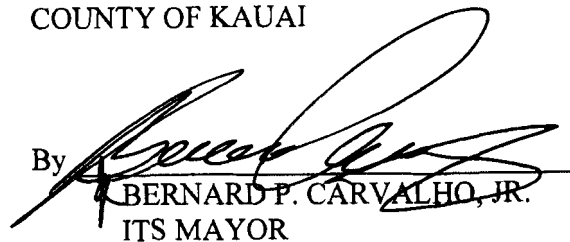

Notary Public, State of Hawaii
PATRICIA A. KOGA
Print Name: _____
07/17/10
My commission expires: _____

NOTARY PUBLIC CERTIFICATION	
Doc. Date: <u>redated at time of notarization</u>	# Pages: <u>16</u>
Notary Name: PATRICIA A. KOGA	Judicial Circuit: <u>Third</u>
Doc. Description: <u>FCC Waiver - 700 Mhz</u> <u>Broadband</u>	
Notary Signature: 	
Date: AUG 12 2009	

APPROVED AS TO FORM
AND LEGALITY:


ALFRED B. CASTILLO
COUNTY ATTORNEY
COUNTY OF KAUAI

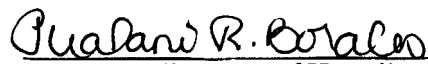
COUNTY OF KAUAI

By 
BERNARD P. CARVALHO, JR.
ITS MAYOR

STATE OF HAWAII)
COUNTY OF KAUAI) SS.

On this 11th day of August, 2009, before me personally appeared BERNARD P. CARVALHO, JR., to me personally known, who, being by me duly sworn, did say that he is the Mayor of the County of Kauai, a political subdivision of the State of Hawaii, and that the said instrument was signed and sealed on behalf of said County of Kauai by authority of its Charter; and the said BERNARD P. CARVALHO, JR. acknowledged the said instrument to be the free act and deed of said County of Kauai.

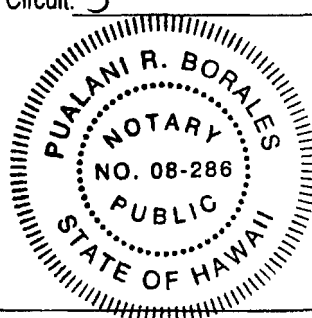
IN WITNESS WHEREOF, I have hereunto set my hand and official seal.


Notary Public, State of Hawaii

Print Name: Pualani R. Borales

My commission expires: 08/03/2012

NOTARY PUBLIC CERTIFICATION		
Doc. Date:	<u>Undated</u>	# Pages: <u>16</u>
Notary Name:	<u>Pualani R. Borales</u>	Judicial Circuit: <u>5th</u>
Doc. Description:	<u>Request for Waiver of the Commissions Rules Regarding a 700 MHz Public Safety Interoperable Broad band Network</u>	
Notary Signature:	<u>Pualani R. Borales</u>	
Date:	<u>August 11, 2009</u>	



CITY AND COUNTY OF HONOLULU


By M. Hanne
MURHANNE MANN
ITS MAYOR

STATE OF HAWAII)
) SS.
CITY AND COUNTY OF HONOLULU)

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.



unto set my hand and official seal:



Notary Public, State of Hawaii

Print Name: **JENNIFER M. AGCAOILI**

Notary Public, State of Hawaii

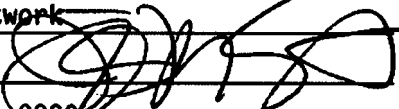
My commission expires: **11-09-2010**

NOTARY PUBLIC CERTIFICATION


Doc. Date: no date # Pages: 16

Notary Name: Jennifer M. Agcaoili Judicial Circuit: First

Doc. Description: Request for Waiver
PS Docket No. 06-229
700 MHz Public Safety Interoperable
Broadband Network

Notary Signature: 

Date: August 19, 2009



APPROVED AS TO FORM:

STATE OF HAWAII

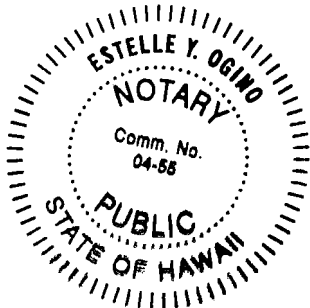
Diane Erickson
Diane Erickson
DEPUTY ATTORNEY GENERAL

Russ K. Saito
RUSS K. SAITO
ITS COMPTROLLER

STATE OF HAWAII)
CITY AND COUNTY OF HONOLULU) SS.

On this 13th day of August, 2009, before me personally appeared Russ K. Saito, to me personally known, who, being by me duly sworn or affirmed, did say that such person executed the foregoing instrument as the free act and deed of such person, and if applicable, in the capacity shown, having been duly authorized to execute such instrument in such capacity.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.



Estelle Y. Ogino
Notary Public, State of Hawaii

Print Name Estelle Y. Ogino

My commission expires: 2-15-2012

NOTARY PUBLIC CERTIFICATION

Doc. Date: AUG 13 2009 # Pages: 16
Notary Name: Estelle Y. Ogino Judicial Circuit: 1st
Doc. Description: Req. for Waiver by 4 Counties
& State of HI for Waiver of Commission's Rule
Re 700 MHz Public Safety Interoperable
Broadband Network
Notary Signature: Estelle Y. Ogino
Date: 8/13/2009

